

WHAT IS CLAIMED IS:

- 1                   1.       A mail processing device, comprising:  
2                   a reorientation arrangement that, when the mail processing device is in a first  
3 position, is configured to sequentially receive mail items from an upstream process and  
4 reorient each item such that the top side of a particular item from the upstream process  
5 becomes the bottom side of the item when placed in a downstream process;  
6                   a receiving arrangement configured to receive mail items from the upstream  
7 process and guide the mail items into the reorientation arrangement; and  
8                   a controller that is programmed to cause the reorientation arrangement to  
9 reorient a mail item in response to the detection of the mail item by a sensor, wherein the  
10 controller is further programmed to cause the mail item to be moved toward the downstream  
11 process after each mail item is reoriented.
- 1                   2.       The mail processing device of claim 1, further comprising:  
2                   a guide arrangement that, when the mail processing device is in a second  
3 position, is configured to receive the mail items from the upstream process and guide each  
4 mail item to the down stream process without reorienting each item with respect to its top and  
5 bottom sides.
- 1                   3.       The mail processing device of claim 2, further comprising a sensor that  
2 senses whether the mail processing device is in the first position or the second position.
- 1                   4.       The mail processing device of claim 1, wherein the reorientation  
2 arrangement comprises:  
3                   a bin that receives each mail item;  
4                   an axle that defines an axis about which the bin is configured to rotate; and  
5                   a motor configured to rotate the bin approximately 180° about the axis by  
6 driving the axle.
- 1                   5.       The mail processing device of claim 4, wherein the bin comprises a  
2 first container and a second container that are arranged generally symmetrical with respect to  
3 one another about the axle such that the first container is disposed above the second container  
4 when the first container is positioned to receive a mail item, and wherein the first container is  
5 disposed below the second container when the first container is positioned to deposit a mail

6 item onto a conveyor configured to transport the mail item toward the downstream process,  
7 thereby positioning the second container to receive a subsequent mail item.

1                   6.       The mail processing device of claim 1, further comprising:  
2                   a guard having an open position and a closed position, wherein when the guard  
3 is in the closed position it generally restricts access to moving parts of the reorientation  
4 arrangement; and  
5                   a sensor that senses the position of the guard and prevents operation of the  
6 reorientation arrangement when the guard is open and the mail processing device is in the  
7 first position.

1                   7.       The mail processing device of claim 1, wherein the mail items  
2 comprise a card carrier and a card attached thereto.

1                   8.       The mail processing device of claim 1, wherein the mail items  
2 comprise z-folded documents folded along two folds that divide the document into three  
3 roughly equal areas.

1                   9.       The mail processing device of claim 1, wherein the mail items  
2 comprise documents folded twice in half width-wise, along folds that divide the document  
3 into four roughly equal areas.

1                   10.      A method of processing mail items, comprising:  
2                   sequentially receiving mail items at a mail processing device from an  
3 upstream process;  
4                   reorienting each mail item such that the top side of each item in the upstream  
5 process becomes the bottom side of the item in a downstream process; and  
6                   sequentially advancing each mail item to the downstream process.

1                   11.      The mail processing device of claim 10, wherein the mail items  
2 comprise a card carrier and a card attached thereto.

1                   12.      The mail processing device of claim 10, wherein the mail items  
2 comprise z-folded documents such that two folds divide the document into three roughly  
3 equal areas.

1                   13.     The mail processing device of claim 10, wherein the mail items  
2     comprise documents folded twice in half width-wise, thus positioning folds that divide the  
3     document into four roughly equal areas.

1                   14.     A mail processing device, comprising:  
2                   means for sequentially receiving mail items from an upstream process;  
3                   means for reorienting each item such that the top side of each item in the  
4     upstream process becomes the bottom side of the item in a downstream process; and  
5                   means for sequentially advancing each mail item to the downstream process.

1                   15.     The mail processing device of claim 14, wherein the mail items  
2     comprise a card carrier and a card attached thereto.

1                   16.     The mail processing device of claim 14, wherein the mail items  
2     comprise z-folded documents such that two folds divide the document into three roughly  
3     equal areas.

1                   17.     The mail processing device of claim 14, wherein the mail items  
2     comprise documents folded twice in half width-wise, thus positioning folds that divide the  
3     document into four roughly equal areas.

1                   18.     The mail processing device of claim 14, further comprising means for  
2     guiding each mail item from the upstream process to the down stream process without  
3     reorienting each item with respect to its top and bottom sides.

1                   19.     The mail processing device of claim 14, wherein the means for  
2     reorienting each item comprises:  
3                   a bin that receives each mail item;  
4                   an axle that defines an axis about which the bin is configured to rotate; and  
5                   a motor configured to rotate the bin approximately 180° about the axis by  
6     driving the axle.